REMARKS

In accordance with the foregoing, claims 1, 4, 12, 15, and 16 are amended. No new matter is added. Claims 1, and 3-16 are pending and under consideration.

CLAIM REJECTIONS UNDER 35 USC § 103

Claim 15 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,813,021 to Chung et al. (hereinafter "Chung").

Claims 1, 3-6, 12, 15, and 16 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Pat No. 6,859,268 to Chou et al. ("Chou") in view of Chung.

Claims 7-10 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Chou and Chung and further in view of U.S. Patent No. 6,512,612 to Fatehi et al. ("Fatehi").

Claim 11 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Chou, Chung and Fatehi and further in view of U.S. Patent No. 6,154,273 to Suzuki ("Suzuki").

Claims 13 and 14 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Chou and Chung and further in view of U.S. Patent No. 6,885,820 to Eder et al. ("Eder").

Independent claims 1, and 4 are amended herewith to clarify (for example using the language of amended claim 1) that the "change amount in an optical signal to noise ratio" is determined based on the "change amount in time of a measured value of said degree of polarization." Similarly, claim 12, 15, and 16 are amended to specify that the change amount of the optical signal to noise ratio is determined using values of the degree of polarization measured at different times. The claim amendments are fully supported by the originally filed specification, for example, FIGS. 4 and 5 with their corresponding descriptions.

Thus, independent claim 1 patentably distinguishes over the cited prior art references at least by reciting "determining a change amount in an optical signal to noise ratio of said optical signal according to a change amount in time of a measured value of said degree of polarization relative to said stored initial value."

The Office Action takes the position that Chou teaches the "measuring..." and "storing..." operations recited in claim 1. While submitting that Chou discloses an apparatus for measuring a degree of polarization, Applicants respectfully submit that Chou does not discloses or even suggest any concern to the time evolution of the measured degree of polarization. In col. 9, lines 8-32, Chou discusses a series of measurements of different states of polarization (SOP) in order to determine the principal states of polarization (PSPs). These polarization measurements

are performed sequentially and refer to an existing state, not to the time evolution of the degree of polarization.

Moreover, Chou makes no reference to a relationship between the optical signal to noise ratio (OSNR) and the measured degree of polarization.

The Office Action further asserts that in col. 8, lines 14-22, Chung teaches an OSNR interpolation method "which requires measuring a change amount in an optical signal to noise ratio of said optical signal" and that in col. 7 lines 22-31, "Chung also teaches that the determining of OSNR is based on a measured value of a degree of polarization of said optical signal" (see page 3, lines 22-31, of the outstanding Office Action).

In fact, Chung teaches a method of measuring the OSNR by using a maximum power and a minimum power output while a quarter-wave plate and a linear polarizer rotate with different speeds (see Chung's Abstract, FIGS. 3a and 3b, Equations, 2 and 3 and the corresponding descriptions). Chung does not disclose any measurement of the degree of polarization, and, thus, does not anticipate or render obvious "determining a change amount in an optical signal to noise ratio of said optical signal according to a change amount in time of a measured value of said degree of polarization, relative to said stored initial value" as recited in claim 1.

Additionally, in Chung, an OSNR measurement is performed for light in a narrow range of wavelength (see col. 8, lines 17-22 of Chung). The linear interpolation referred to in Chung is an interpolation across the wavelength spectra (see e.g. FIG. 6 of Chung and the corresponding description) and not an interpolation in time.

At least for these reasons, claim 1 and claim 3 depending from claim 1 patentably distinguish over Chou and Chung.

Amended independent claim 4 patentably distinguishes over the prior art at least by reciting "an optical SNR calculation section that stores an initial value of said degree of polarization of said optical signal, and determines a change amount in an optical signal to noise ratio of said optical signal according to a change amount in time of a measured value of the degree of polarization obtained in said degree of polarization measuring section relative to said stored initial value."

Based on the above discussion about Chou and Chung disclosure, these prior art references fail to anticipate or render obvious at least "an optical SNR calculation section that stores an initial value of said degree of polarization of said optical signal, and determines a

change amount in an optical signal to noise ratio of said optical signal according to a change amount in time of a measured value of the degree of polarization obtained in said degree of polarization measuring section relative to said stored initial value" as recited in claim 4. Fatehi, Suzuki, and Eder do not correct or compensate for the above identified failure of Chou and Morkel in rendering obvious the features recited in the independent claims. Therefore, claim 4 and claims 5-11, 13, and 14 depending from claim 4 patentably distinguish over the cited prior art.

In view of the above discussion of Chou and Chung, amended independent claim 12 patentably distinguishes over the prior art at least by reciting "an optical signal to noise ratio calculation section which determines a change amount in an optical signal to noise ratio of said optical signal, by using the measured value of the degree of polarization obtained by the degree of polarization measuring device in said automatic polarization mode dispersion compensation apparatus at different times."

In item 2, the Office Action takes the position that claim 15 is rendered obvious by Chung. However, in Chung the degree of polarization is not measured. Chung teaches a method of measuring the OSNR by using a maximum power and a minimum power output while a quarter-wave plate and a linear polarizer rotate with different speeds (see Chung's Abstract, FIGS. 3a and 3b, Equations, 2 and 3 and the corresponding descriptions).

Additionally, in Chung, the OSNR measurement is performed for light having a narrow range of wavelength (see col. 8, lines 17-22 of Chung), and the linear interpolation referred to therein is an interpolation across the wavelength spectra (see e.g. FIG. 6 of Chung and the corresponding description) and not an interpolation in time.

Thus, Chung does not anticipates or render obvious "determining a change amount in the signal to noise ratio of the optical signal based on a measured value of a degree of polarization of said optical signal at different times" as recited in claim 15.

In view of the above discussions of Chou and Chung, amended independent claim 16 patentably distinguishes over the prior art at least by reciting "measuring a degree of polarization of the part of the signal at different times, and comparing the measured degree of polarization with a reference value of the degree of polarization to monitor a change of the signal to noise ratio."

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the

application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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